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July 17, 1996

William F. Caton
Secretary
Federal Communications Commission
1919 M Street, NW
Room 222
Washington, D.C. 20554

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Dear Mr. Caton:

RE: Ex parte Filing, CC Docket No. 96-112 & CC Docket No. 94-1

USTA hereby files the enclosed document authored by Dr. Laurits R. Christensen, Christensen Associates, entitled ***Treatment of LEC Investments in Joint-Use Broadband Facilities Under a Price Cap Regime***. Dr. Christensen has been a principle co-author of USTA's position on price cap regulation in CC Docket No. 94-1 and is a recognized expert and author on the subject.

The purpose of this document is to explain why LEC investments do not require special cost allocation or exogenous price cap adjustments. As stated in detail in Dr. Christensen's paper, price cap regulation protects customers of regulated services without a need to allocate costs or adjust rates, and also allows those customers to benefit from investment in new technologies, including economies of scope.

Please include a copy of this filing in the record of each proceeding.

Respectfully submitted,

Keith Townsend
Director
Regulatory Affairs & Counsel

Attachment

cc: Chairman Hundt
Commissioner Quello
Commissioner Ness
Commissioner Chong
FCC Staff

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TREATMENT OF LEC INVESTMENT IN JOINT-USE BROADBAND FACILITIES UNDER A PRICE CAP REGIME

Laurits R. Christensen
July 16, 1996

As telephone companies move forward with plans to deploy new technologies to improve existing services and offer new services, concern has been expressed that customers of regulated traditional telephone services will be forced to pay for such network upgrades without receiving the benefits from any resulting economies of scope -- the lower level of cost due to producing a range of products using the same facilities instead of producing the products separately. In response to this concern, proposals have been made to somehow adjust the price cap mechanism based on an arbitrary allocation of costs of these new technologies between the traditional regulated services and new video or other nonregulated services. Any such allocation is unnecessary under a price cap regime without sharing, and it is certainly improper to adjust prices to reflect the removal of costs that were never included in the setting of rates. Moreover, any economies of scope can be fully captured by an appropriate price cap formula.

This concern and the proposals that stem from it are, in reality, artifacts of rate-of-return regulation and are misplaced under price cap regulation. As described in this paper, price cap regulation protects customers of regulated services without a need to allocate costs or adjust rates, and also allows those customers to benefit from investment in new technologies, including economies of scope. Below I explain why local exchange carrier ("LEC") investments do not require any special cost allocation or exogenous price cap adjustments.

1. In a Price Cap Regime Without Sharing, Cost Allocations or Changes in Cost Allocations Have No Effect on Prices. In a price cap system of regulation without sharing, prices are capped by a formula that has two basic ingredients: a measure of overall inflation in the economy, and an offset to the inflation measure (the "X factor"). Prices paid by the customer are directly regulated by the price cap formula -- i.e., regulated prices cannot rise above the ceiling (the price cap index) established by the price cap formula. This is unlike rate-of-return regulation where prices are indirectly regulated through the authorized rate of return and depend largely on allocations of revenue requirements to services.

Once starting rates for the price-capped services have been established, prices of those services are regulated by the price cap formula, not by allocations of the telephone company's costs. Moreover, the price cap mechanism prevents telephone companies from passing cost increases through to customers via higher rates. In other words, independent of any cost increases incurred by the company, the prices paid by customers for regulated services are capped by the index. Thus, a company's investment decisions concerning broadband facilities will not affect prices for price capped services, contrary to standard practice under rate-of-return regulation.

2. The Measurement of Total Factor Productivity (TFP) Captures the Benefits of Economies of Scope. When the offset to inflation in the price cap formula is based on the differential between LEC productivity growth and economy-wide TFP growth, higher rates of LEC productivity growth lead to a higher X factor and lower rates of LEC productivity growth lead to a lower X factor.

In the current review of LEC price cap regulation (CC Docket 94-1), the Commission tentatively concluded that economically meaningful TFP should be used as a basis for the price cap formula. My TFP study of the LEC industry has been put forward by the USTA for purposes of setting the appropriate X factor. My study is based on the total company results, as defined by the Commission's Part 32 accounting rules. The Part 32 accounting rules take an economic approach to measuring revenue and expense. Specifically, Rules 32.23 and 32.4999 specify that the company accounts include not only all regulated services, but also all nonregulated services that have joint and common costs with regulated services. Other Commission accounting rules, such as Part 64 and Part 36, base cost calculations on allocation rules. The joint and common cost concept has a well-defined economic meaning while arbitrary allocation rules have no foundation in economics. For this reason, I based my LEC TFP study on the Part 32 accounts rather than the Part 64/Part 36 allocated portion of these accounts.

Services with joint and common costs generally have "economies of scope." Economies of scope for different services occur when the cost of providing those services jointly is lower than the cost of providing them from separate facilities. If regulated and nonregulated services have joint and common costs, a company will generally have higher TFP if it offers both the regulated and nonregulated services, rather than just offering the regulated services. This is because TFP measures the ratio of Total Output to Total Input.

Because the TFP growth differential is the offset to inflation in the price cap formula, higher LEC TFP growth (all other factors held constant) results in a lower

ceiling on regulated prices. Thus, to the extent that joint and common facilities produce greater output of either regulated or nonregulated services, the customers of regulated services are better off.

3. LECs Investment in Broadband Facilities Should Result in Higher Measured TFP Growth. LEC investment in broadband facilities will be used to produce both regulated services and nonregulated services, such as video. Other parties in CC Docket 96-112 have expressed concern that investment in broadband facilities will lead to rate increases for customers of traditional regulated services. This concern stems largely from taking a rate-of-return/cost allocation perspective on the process and it ignores how price cap regulation works. As noted above, when services are regulated by price caps without sharing, such investments or changes in cost allocations do not have an impact on the price cap formula.

Given the current Part 32 rules, these broadband facilities and the services produced by them will be included in the computation of TFP. Therefore, investment in these types of facilities has the potential to increase TFP growth and, in a price cap regime, will benefit customers of regulated services.

However, even under price cap regulation, some parties in CC Docket 96-112 question whether investments in broadband facilities may become a "drag" on TFP growth and, thus, cause the price cap ceiling for regulated services to become higher than it would otherwise be. For example, some parties have claimed that the investments required to deploy broadband facilities will result in lower TFP growth, at least initially. This, they argue, would eventually lead to a lower X factor, a higher price

cap ceiling and, thus, the potential for higher regulated rates. This concern is misplaced for several reasons.

First, it must be understood that incremental investment in broadband facilities would only be a small portion of total LEC investment and would have a relatively small impact on the overall level of TFP. TFP is the ratio of Total Output to Total Input. Capital Input, which includes all plant and equipment in service used in the provision of telephone service (i.e., the total stock of capital), accounts for less than half of the cost of Total Input. In any given year, gross additions to plant and equipment accounts for only about 7 percent of plant and equipment in service. Thus, even large increases in new investments can have only a minor impact on Capital Input and Total Input in the calculation of TFP.

Second, any impact of broadband facility investment on LEC TFP growth will be minimized by the fact that the investments are likely to be phased in over time and not all installed immediately. Because these investments will be spread over a number of years, the annual impact of broadband facility investment on total investment (total plant added) will not be large. Furthermore, because Capital Input in the TFP calculation is based on total plant in service, the impact of this broadband investment on the TFP Total Input calculation will be even smaller.

A numerical example can show the likely magnitude of broadband facility investment on the growth in Total Input. Suppose that broadband facility investment increases gross additions by 10 percent. This would lead to approximately a seven tenths of one percent increase in capital. Since capital constitutes approximately 45 percent of Total Input, Total Input would increase by only three tenths of one percent.

Moreover, this increase would be offset by any expense savings associated with the deployment of fiber and other advanced technologies. Thus, the net impact of these investments on Total Input (the combination of Capital, Labor and Materials) is likely to be minimal.

Finally, the impact of these investments on TFP must also consider the additional revenues generated by services that use these facilities. Up to this point, I have discussed the worst-case scenario--i.e., the impact of investment in broadband facilities on TFP with no corresponding increase in revenues from either existing services or new services, such as non-regulated video services, made possible by the investments. It is important to understand that all revenues from services that rely on the new joint-use technology, including non-regulated video services, contribute to Total Output in the calculation of TFP. Any source of revenues has the impact of further increasing TFP growth, and thereby reducing the price cap index. The relative success of the new video venture only impacts the size of the downward pressure on regulated rates, not the direction.

4. An Exogenous Adjustment to the Price Cap Formula to Remove Portions of Broadband Investment is Not Warranted. Other parties commenting in CC Docket 96-112 have also argued that the LECs should make an exogenous cost adjustment to lower the price cap index to reflect the "removal" of common costs allocated to nonregulated video services. Such an adjustment would lower the price cap index directly, in addition to any reduction mandated by the price cap productivity formula.

Again this is a retreat to rate of return/cost allocation type regulation and is economically flawed.

First, to the extent such investment was undertaken after adoption of price caps, the adjustment would "remove" costs that were not included in the initial rates going into price caps. The only legitimate way to remove such costs exogenously would be first to add them in as an exogenous adjustment. Second, as explained above, adoption of a TFP formula fully captures the economies of scope associated with the new investment. An exogenous adjustment would double-count that same impact and penalize LECs that make such investment. In contrast to the appropriate incentives of price cap regulation, the result of such a policy would be to discourage making productivity enhancing joint-use investment.

5. Conclusion. Today's price cap formula protects customers of regulated services from bearing the cost of investments in nonregulated services. The LEC industry proposal for a TFP based formula would allow those same customers to fully share in the economies of scope associated with the joint use investment. Mandating an exogenous cost adjustment based on allocation to that investment would double-count those benefits, and discourage making the investment in the first place -- harming customers of both regulated and nonregulated services.